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# MULTIPLE INTELLIGENCES AMONG PHYSICAL EDUCATION STUDENTS IN PANGASINAN STATE UNIVERSITY OF THE PHILIPPINES

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## ABSTRACT

Howard Gardner's theory of multiple intelligences opens the door for seeing the dynamicity of an individual. This creates a wider perspective of highlighting strengths over weaknesses; thus, academic community must identify the totality of a student through evaluation on various frames of intelligence. This descriptive study determined the level of multiple intelligences among physical education students of Pangasinan State University. Three-hundred three (303) respondents were randomly selected through fishbowl method provided the data by answering a questionnaire. Findings show that the Physical Education students do have the above average level of multiple intelligences along visual. Likewise, chi-square ($X^2_c$) correlation test results show that there is no significant relationship between the profile in terms age, sex, civil status, monthly family income and academic status and the level of multiple intelligences. Over-all, it is concluded that PSU students possess dominance in terms of visual and profile had no bearing on the multiple intelligences. The most identified proposed measure to improve the multiple intelligences is the design of teaching strategies to accommodate the most dominant as well as the recessive multiple intelligences of the students.

**KEYWORDS:** Multiple intelligences, physical education, fishbowl method.

**INTRODUCTION:**

"The make-up of the mind is not tantamount to the entire frame of the body". The strength in one area does not reliably predict comparable strength in another area. With this intuitive conclusion in mind, every individual may set studying intelligence in a systematic, multidisciplinary and scientific manner drawing from other disciplines which leads to Gardner's Multiple Intelligences. Undeniably supported by the passage, mens sana en corpore sano (sound mind in a sound body) disclosing the concept that the mind is separated from body's strength though they go together to effectively function with one another.

A cup of a seven-in-one coffee mix is more beneficial than just a cup of single-content coffee. In like manner, an individual with a lot of expertise who excels in many ways is more impressive than the one who just stands out in a sole and single endeavor. However, it is believed that many are those who are masters of none but good in all matters and few are superior in a single aspect yet slow in some undertakings. This is so because of the fact that people are not alike, John Locke's principle of individuality, where they have different strengths and waterloos. Their intelligence to one aspect could not be equaled to the performance in other pieces of multiple intelligences. Through this concept, one could not be judged as poor if other frames of intelligences have not yet seen and have not yet being manifested by the individual himself.

It is believed that every individual possess all eight types of the intelligences at varying levels of aptitude and proficiencies though more are still unraveled -- and all learning experiences do not have to relate to a person's strongest area of intelligence. However, it depends on the child's constant exposure and experiences which make his/her intelligences be developed. After all, learning is fluid and multifarious. Therefore, it is important to avoid labeling students as one type of learner.

Morgan refers to Gardner's approach of describing the nature of each intelligence with terms such as abilities, sensitivities, skills and capacities as evidenced of the fact that theory is really a matter of semantics rather than new thinking on multiple constructs of intelligence and resembles earlier work by factor theories of intelligence like L.L. Thurstone who argued that a single factor cannot explain the complexity of human intellectual activity. The theory of multiple intelligences has grabbed the attention of many educators, and hundreds of schools are currently using its philosophy to redesign the way it educates children. (Armstrong, 2009).

The multiple intelligences theory has strong implications and great impact for adult learning and development. It gives adults a whole new way to look at their lives, examining potentials that they left behind in their childhood but now have the opportunity to develop their courses, hobbies and/or other programs of self-development. Hence, this study has been conducted in Pangasinan State University (PSU)-Urdaneta City Campus.

**OBJECTIVES OF THE STUDY:**

This study aimed to determine the profile of the physical education students of Pangasinan State University in terms of their age, sex, civil status, monthly family income and academic status. It further determined their level of multiple intelligences along visual/spatial, verbal/linguistic, interpersonal, intrapersonal, musical, logical-mathematical, bodily-kinesthetic and naturalistic. It also aimed to correlate the profile and the level of multiple intelligences of the students. Data gathered was used as bases in the measures proposed to improve the multiple intelligences of the students in Pangasinan State University.

**MATERIALS AND PROCEDURES:**

This study used descriptive-correlational method. A questionnaire checklist was constructed and answered by 303 students out of 1,243 (using the Slovin formula) from Architecture, ABEnglish, Civil Engineering, Electrical Engineering, Computer Engineering, Mechanical Engineering, ICT, BS Mathematics and Teacher Education courses of PSU-Urdaneta Campus. Questionnaires were personally administered by the researcher after permission has made. The data collected were kept with strictest confidentiality.

The level of multiple intelligences was evaluated using a 5-point Likert scale. The following scales were used to interpret the level of multiple intelligences: 4.50-5.00, outstanding/very much high; 3.50-4.49, above average/very high; 2.50-3.49, average; 1.50-2.49, fair/low and 1.00-1.49, poor/very low.

Data were gathered during the second semester through a questionnaire that was distributed among the first and second year students. Data from the questionnaire were tallied and statistically analyzed.

Frequency counts and percentage distribution were used to identify the profile of the respondents, weighted mean was used to determine the level of multiple intelligences and chi-square verified the correlation between the profile and the level of multiple intelligences. The level of significance was 0.05.

**RESULTS AND DISCUSSION:**

**Profile:** Table 1 shows the profile of the respondents. The respondents' age ranges from 16 years old and below to 19 years and above. Two-hundred one or 66.3% have ages ranging from 17-18 years old while a little more than 50 percent are 16 years old and less than 50% with 19 years and above. The table revealed that difference along sex is not much indicated by the respective percentages of 55.8 (males) and 44.2 (females).

The civil status of the respondents has been considered and result showed that majority are single and only 2.3% are married. Along their monthly family income, one-hundred fifteen or 38% have an income of 5,000 and below; followed by 99 or 32.6% with an income of ranging from 6,000 to 10,000.00.

However, more than 50% of the respondents are categorized as regular (186 or 61.4) while 117 or 38.6% are irregular students.

**Table 1: Profile of the Respondents (N=303)**

| Profile | | Frequency | Percentage |
|---|---|---|---|
| Age | 16 and below | 56 | 18.5 |
| | 17-18 | 201 | 66.3 |
| | 19 and above | 46 | 15.2 |
| Sex | Male | 169 | 55.8 |
| | Female | 134 | 44.2 |
| Civil Status | Single | 296 | 97.7 |
| | Married | 7 | 2.3 |
| Monthly Family Income | 5000 and below | 115 | 38 |
| | 6,000-10,000 | 99 | 32.6 |
| | 11000-15000 | 46 | 15.2 |
| | 16,000 and above | 43 | 14.2 |
| Academic Status | Regular | 186 | 61.4 |
| | Irregular | 117 | 38.6 |

**Level of Multiple Intelligences:** The Physical Education students do have the average level of multiple intelligences as indicated by the overall mean of 3.36.

Consequently, very impressive that students are above average along visual intelligence, (Xw=3.66). However, the table further shows that their linguistic intelligence, (Xw=3.35; interpersonal intelligence, (Xw =3.46); intrapersonal intelligence, (Xw=3.16); musical intelligence, (Xw=3.48); logical mathematical intelligence, (Xw=3.27), bodily-kinesthetic intelligence, (Xw=3.24) and naturalistic intelligence, (Xw=3.28) are only average.

The results imply that students learn best by pictures and work well on maps, charts, diagrams and visual arts. Gardner revealed that such will provide every student activities which involve mastery of spoken and written language, socially engaging, self-introspection, inflections in the human voice, scientific thinking, logical reasoning, hands-on learning and environment-friendly and nature-engaging.

**Table 2: Summary on the Level of Multiple Intelligences**

| Multiple Intelligences | Weighted Mean (Xw) | Descriptive Equivalent |
|---|---|---|
| Visual Intelligence | 3.66 | Above Average |
| Linguistic Intelligence | 3.35 | Average |
| Interpersonal Intelligence | 3.46 | Average |
| Intrapersonal Intelligence | 3.16 | Average |
| Musical Intelligence | 3.48 | Average |
| Logical-Mathematical Intelligence | 3.27 | Average |
| Bodily-Kinesthetic Intelligence | 3.24 | Average |
| Naturalistic Intelligence | 3.28 | Average |
| Overall Mean | 3.36 | Average |

**Test of Significant Relationship:** This study verified if there exists a significant relationship between the level of multiple intelligences and the profile of the students of PSU-Urdaneta Campus.

A chi-square was used to assess the relationship. Table 3 shows that only the level of bodily-kinesthetic intelligence is dependent on age. This is justified by $X^2_c$ of 16.954 with a probability of 0.031<0.05 level of significance. However, generally, the age of the respondents has no bearing on the level of multiple intelligence.

Results showed that there is no correlation between sex and level of visual, linguistic, interpersonal, intrapersonal, musical, logical-mathematical, bodily-kinesthetic and naturalistic which are justified by the $X^2_c$ of 1.094,3.394, 4.362, 2.908, 6.328, 4.276 and 2.700, respectively. All the computed values have probabilities higher than 0.05, hence, no significance.

Further, civil status is not significantly related with the level of multiple intelligences subjecting the data to the chi-square test revealed computed values of 3.601, 7.908, 2.805, 1.669, 1.620, 1.436 and 2.050. Each of the $X^2_c$ have exact probabilities >0.05. This implies that civil status has no bearing on the level of multiple intelligences however, single students tend to have higher level of musical intelligence but lower than married in other identified intelligences.

**Table 3: Test of Relationship between Profile and Level of Multiple Intelligences**

| Multiple Intelligences | PROFILE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Age | | Sex | | Civil Status | | MFI | | Academic Status | |
| | $X^2_c$ | Prob. | $X^2_c$ | Prob. | $X^2_c$ | Prob. | $X^2_c$ | Prob. | $X^2_c$ | Prob. |
| Visual | 6.980 | 0.323 | 1.094 | 0.778 | 3.601 | 0.308 | 3.428 | 0.945 | **8.143 *** | 0.043 |
| Linguistic | 5.545 | 0.792 | 3.394 | 0.494 | 7.908 | 0.095 | 8.228 | 0.767 | 1.273 | 0.866 |
| Interpersonal | 7.872 | 0.446 | 4.362 | 0.359 | 1.940 | 0.747 | 13.079 | 0.363 | 4.889 | 0.299 |
| Intrapersonal | 9.715 | 0.423 | 2.908 | 0.573 | 2.805 | 0.591 | 20.050 | 0.066 | **19.252*** | 0.001 |
| Musical | 6.973 | 0.540 | 6.328 | 0.176 | 1.669 | 0.796 | 16.983 | 0.150 | 4.260 | 0.372 |
| Logical-Mathematical | 10.214 | 0.250 | 4.276 | 0.370 | 1.620 | 0.805 | 10.207 | 0.598 | 2.626 | 0.622 |
| Bodily-Kinesthetic | **16.954 *** | 0.031 | 3.916 | 0.417 | 1.436 | 0.838 | 10.703 | 0.555 | 2.005 | 0.735 |
| Naturalistic | 6.280 | 0.393 | 2.700 | 0.440 | 2.050 | 0.562 | 5.413 | 0.797 | 4.640 | 0.200 |

**-significant*

In like manner, as justified by the X2c of 3.428 for visual, 8.228 for linguistic, 13.079 for interpersonal, 20.050 for intrapersonal, 16.983 for musical, 10.207 for logical mathematical, 10.703 for bodily-kinesthetic and 5.413 for naturalistic, monthly family income has no correlation with the level of multiple intelligences.

The table further shows that the academic status is significantly correlated visual intelligence as indicated by the computed chi-square value of 8.412 with an exact probability of 0.043<0.05 significance>. The same result revealed in terms of intrapersonal intelligence with computed chi-square value of 19.252 registering an exact probability of 0.001<0.05. The other multiple intelligences were not related to academic status.

## CONCLUSIONS AND RECOMMENDATIONS:

Physical education students of Pangasinan State University possess a dominant multiple intelligence in terms of visual intelligence which is the ability to manipulate and create mental images in order to solve problems. They are above average and did not reach the highest level of multiple intelligences that is outstanding. Their age, sex, civil status, monthly income and academic status have no bearing on the level of multiple intelligences. Lastly, recommendations were offered to improve the multiple intelligences of the physical education students of PSU.

The researcher recommended that the instructors and professors must design teaching strategies to accommodate the dominant multiple intelligence and must also consider other intelligences especially bodily-kinesthetic, musical and interpersonal. A similar study can be conducted to determine if there is a relationship between academic performance in Physical Education and level of multiple intelligences. Further studies are recommended to determine other possible factors that influence the academic performance of students enrolled in PE to validate the result of this study with other institution in the region or with a wider scope.

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